

## WHAT IS CLAIMED IS:

1. A wireless communication system comprising multiple terminals each of which terminals has an unique terminal identifier to be identified from any other terminal on the network wherein each of said multiple terminals provides:

5 a terminal identification means for identifying any other terminal with which an individual terminal itself communicates using the terminal identifier of another terminal;

10 a duplication notification means that operates when that individual terminal detects the existence of another terminal having the same terminal identifier as itself to issue notification of that duplication of terminal identifiers to said other terminal;

15 a substitute notification means which operates when said individual terminal detects multiple of other terminals to which said individual terminal can communicate have the same terminal identifier but differ from the terminal identifier of said individual terminal to notify the duplication of terminal identifier to all, some or one of said other terminals.

2. A wireless communication system according to claim 1 wherein each of said multiple terminals provides:

a selection means for selecting at random a terminal identifier when commencing participation on the network;

5 an inquiry means for inquiring whether or not said selected terminal identifier is duplicated with a terminal identifier being used by any other terminal that has already commenced communicating on the network;

a means for repeating a terminal identifier selection through said selection means and/or an inquiry through said inquiry means until

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10 discontinuation of a duplication notification from the duplication notification means or the means for issuing notification instead of another terminal on the network.

3. A wireless communication system according to claim 2 wherein the network on which said multiple terminals are connected is an IP (Internet Protocol) network utilizing IP addresses for terminal identifiers and wherein:

5 said inquiry means includes a means for broadcasting notification in the form of a duplication inspection packet recording the IP address of said individual terminal and a unique physical identifier for that individual terminal to another terminal or terminals on the network;

10 said terminal identification means provides an address coordination table that, for a specified time, holds the coordination between the IP address of each other terminal on said IP network and a physical identifier unique to each said other terminal and provides a registration means that operates when a sender and IP address of a duplication notification packet received by said individual terminal from any other terminal is different to the IP address of said individual terminal itself, moreover said sender IP address is not  
15 registered in said address coordination table, to register said sender IP address and the physical identifier of the terminal that is said sender in said address coordination table;

20 said duplication notification means includes a means for immediately sending a duplication notification packet when the sender IP address of a duplication notification packet received from another terminal by said individual terminal is the same as the IP address being used by said individual terminal itself;

said substitute notification means includes a means for sending a duplication notification packet when the sender IP address of a duplication

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25 notification packet received from another terminal is different from the corresponding physical identifier registered in said address coordination table, moreover for a specified period of time, other terminals have not sent a duplication notification packet.

4. A wireless communication system according to claim 3 wherein a duplication notification packet is sent to the physical identifier of the sender of a duplication inspection packet.

5. A wireless communication system according to claim 3 wherein:  
a duplication notification packet is notified by broadcast the terminal that sent a duplication inspection packet knows of an IP address duplication through the physical identifier set in a duplication notification packet.

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6. A wireless communication system according to claim 2 wherein each of said individual multiple terminals provides:

an advertizing means for periodically advertizing the terminal identifier being used by an individual terminal itself to the other terminals on the

5 network after each said individual terminal commences participating on the network; and

a means for changing the physical identifier for that individual terminal itself when the same terminal identifier that said individual terminal is using or is going to use is advertized from another terminal.

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7. A wireless communication system according to claim 6 wherein each of said individual multiple terminals provides a notification means that operates when a terminal identifier advertized from one terminal is the same as the terminal identifier of a second terminal which second terminal can

5 communicate with a third individual terminal but which second terminal is hidden from and unable to communicate directly with said one terminal advertizing the terminal identifier, so that said notification means notifies the terminal identifier duplication to said hidden second terminal.

8. A wireless communication system according to claim 7 wherein the network on which said multiple terminals are connected is an IP (Internet Protocol) network utilizing IP addresses for terminal identifiers and wherein:

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5 said advertizing means includes a means for advertizing notification in the form of an advertizing packet recording the IP address of said individual terminal and a unique physical identifier for that individual terminal to another terminal or terminals on the network;

10 said terminal identification means provides an address coordination table that, for a specified time, holds the coordination between the IP address of each other terminal on said IP network and a physical identifier unique to each said other terminal and provides a registration means that operates when a sender and IP address of an advertizing packet received by said individual terminal from any other terminal is different to the IP address of said individual terminal itself, moreover said sender IP address is not registered in  
15 said address coordination table, to register said sender IP address and the physical identifier of the terminal that is said sender in said address coordination table;

20 said substitute notification means operates such that when the sender IP address of an advertizing packet received from another terminal is different from the corresponding physical identifier registered in said address coordination table, in addition to sending a duplication notification packet to the terminal for that registered physical identifier, provides a means for updating the appropriate corresponding physical identifier in said address

coordination table to the physical identifier notified through the advertizing  
25 packet.

9. A wireless communication system comprising multiple terminals performing wireless communication each of which terminals is allocated at random a terminal identifier to identify an individual terminal itself from any other terminal on the network wherein each of said multiple terminals  
5 provides:

a terminal identification means for identifying any other terminal with which an individual terminal itself communicates using the terminal identifier of another terminal when that individual terminal performs communication with that other terminal;

- 10 an advertizing means for periodically advertizing the terminal identifier being used by that individual terminal itself to the other terminals on the network after each said individual terminal commences participating on the network; and

- a means for changing the physical identifier for that individual terminal  
15 itself when the same terminal identifier that said individual terminal is using or is going to use is advertized from another terminal

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